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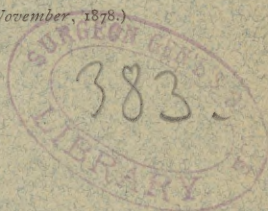
DANGEROUS COSMETICS

BY

M. BENJAMIN,

MEMBER OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF
SCIENCE; MEMBER OF THE CHEMICAL SOCIETY OF
BERLIN, ETC., ETC., ETC.

(Reprinted from NEW REMEDIES for November, 1878.)



NEW YORK

WM. WOOD & CO., PUBLISHERS, 27 GREAT JONES ST.

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With the Compliments of the Author

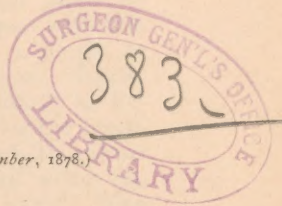
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DANGEROUS COSMETICS.

BY M. BENJAMIN.

MAN, gifted with keen appreciation of the beautiful, endeavors always, when defects exist in nature, to replace them by artificial means. As we look back and among the lower classes of humanity, we find this love of beauty expressed in elaborate decoration by means of bright colors and gaudy apparel. Thus the Indian indicates this feeling by means of the colored paints with which he adorns himself; choosing, for warlike purposes, one hue, while for peace he decks himself in another. Co-existent with this æsthetic quality, mankind exhibits a desire to resist the inevitable ravages of time. Youth, buoyant and expectant, seems ambitious to develop its strength, and is anxious for the battle of life. Perhaps the glamour which is spread over the trials of life by the youthful makes the aged desire to regain their former vigor. Who can tell?

The "Elixir of Life" furnished study for the magicians and alchemists of old, many of whom, in the practice of their "divine art," dreamed that, at last, they had discovered the means of making life eternal. Then, consuming the results of their labors, they would, alas, demonstrate the fallibility of their powers. Travellers

scoured the wide world in search of the spring whose waters should possess the quality of rejuvenating the old and of curing the diseased. These, too, though often bringing fame and renown to the searchers, still failed of the desired result.

It seems to have been reserved for American enterprise and ingenuity to impose on the public credulity by productions of "cheap imitations of the original."* One look at the Patent Office Reports would suffice to convince the most incredulous of the existence of "modern elixirs." In the numerous dyes, restorers, renewers, rejuvenators, regenerators, ambrosias, tonics, and others possessing French names (which certainly appeal to the more highly æsthetic as well as to the larger purses), we find the facilities with which we may delude ourselves (and sometimes others?) that, once more, we may be young again. These cosmetics or beautifiers (for the word cosmetic is derived from *κοσμέω*, to render beautiful), vary in their use and in their constituents. Those intended for hair- and whisker-dyeing are generally compounds of silver and are sold to the public in boxes containing two and sometimes three bottles; the first of which is usually found to contain a tincture of pyrogallic acid, sometimes only the latter. Bottle No. 2 consists of an ammoniacal solution of argentic nitrate. The third bottle, when one is added, contains

* [That this is not peculiarly an American trait will be well appreciated after reviewing the multitude of formulas for cosmetic preparations existing in Europe, a few of which have been published in recent numbers of *NEW REMEDIES*. — ED. N. R.]

potassic bisulphide. The use of this latter is only recommended when the two previous fail to produce the desired effect. The theory of the application of these dyes consists in the anointing of the hair primarily with the pyrogallic acid, then applying the silver which is reduced to its metallic state by the organic matter of the hair, or else it is precipitated as argentic sulphide which colors the hair black. If a lighter tint be desired, a smaller quantity or a more diluted amount of the pyrogallic acid is employed. As a type of this variety I quote a specimen from the Patent Office report for 1863, Dec. 15th, granted to Dominique Duprat, of New York :—

Argentic nitrate.....	..	30	parts by weight.
Gallic acid.....	..	10	" " "
Pomade.....	..	500	" " "

To be perfumed as desired.

These silver compounds are not considered dangerous or injurious.

The so-called hair restorers (principally lead compounds) are those which produce the most deleterious effects, being very poisonous; they yield the direct opposite of that which they purport to do, being destroyers instead of restorers. They are generally composed of some salt of lead—often the plumbic acetate or sugar of lead—dissolved in water which is highly perfumed and holding flowers of sulphur in suspension. Of such a nature is the following one, analyzed by Hager :

Eau de Capille.—A mixture of 16 grammes of glycerin, 8 grammes of hyposulphite of soda, 1 gramme of sugar of lead, about 2 grammes of precipitated sulphur, and 130 grammes of water, perfumed with a small quantity of eau de cologne.*

* *The Chemist and Druggist*, vol. xx., p. 195.

I add two more of these preparations which can hardly be surpassed in their ludicrousness.

Hair Restorative. J. N. SMITH, Colemansville, Ky.

Dried leaves of sage	1 oz.
Black tea.....	1½ oz.
Rain water.....	1 gallon.
Bay rum.....	1 quart.
Pure glycerin.....	5 oz.
Tincture cantharides.....	1 oz.
Corrosive sublimate.....	32 grammes.
Boxwood leaves.....	1 handful.

Digest for three days, and perfume with oil of bergamot or any other scent ; also,

Hair Restorative. JOSIAH JOHNSON, Brooklyn, N. Y.

Willow ashes, leather ashes, cocoanut butter, and grape vine boiled down to a pomatum.*

These two are taken from the Patent Office Reports and amply illustrate the freedom which our Government allows to individuals whose desire seems to be the perpetration of fraud. The circulars that accompany these "Restorers of original Beauty and Color" are commonly elaborate compositions in high-flown language setting forth their peculiar merits, to which is usually added a certificate stating that this Restorer is absolutely free from injurious constituents and signed by ——— M.D. They are generally manufactured on so-called chemical principles by "Professors" of unenviable reputation. The Egyptian Hair Dye which I have examined and in which I have determined the amount of lead contained, deliberately advises purchasers to test it by the "infallible test" of potassic iodide.

A word in regard to "lead poisoning." Lead is a cumulative poison, it is absorbed into the

* Patent Office Report, Aug. 20th, 1872, No. 130, 720.

system and remains there until sufficient has been collected to produce illness, of which there are four varieties, viz. : * colic, arthralgia, paralysis (usually manifesting itself as "dropped wrist"), and brain disease. Only one case of direct death from this cause has come under my observation : that of the French actor Melingue, who died in March, 1875.

"It appears that during his theatrical career, he was in the habit of painting his face with oil-colors, finding that, from his skill in using the brush, he could make up his face better, and produce greater effects than by the use of ordinary cosmetics. But these colors being prepared with lead, the poison was absorbed by his skin, and finally caused the disease which at last proved fatal."† Two cases of partial paralysis, both occurring in ladies and resulting from the use of Hall's Vegetable Sicilian Hair Renewer, are mentioned in the *Boston Journal of Chemistry*.‡ An interesting case of lead poisoning recently occurred in London. A Mme. Rachel was in the habit of selling a wash which, upon analysis, proved to be composed of :

10 grains.....	of a lead-compound.
50 "	common fuller's earth.
160 "	starch.
15 "	hydrochloric acid.
2,400 "	water.

Its use produced a violent eruption or rash on the parts applied.§

* *The American Cyclopedica*, vol. x., page 246.

A complete account of lead-poisoning appears in Percy's *Metallurgy of Lead*, giving its effects and antidotes.

Traité de Maladies de Plomb, Paris, 1839, is considered very reliable authority. † Vol. iv., page 117.

‡ *Appleton's Journal*, vol. xiii., page 571.

§ See N. Y. *Herald*, April 26th, 1878. London *Times*, April 26th, 1878. N. Y. *Times*, March 4th, 1878.

The dyes and restorers thus far mentioned have had for their object the darkening of the hair.

It is sometimes necessary that a lighter tint should be produced. Thus a criminal, in order to evade justice, may desire to change the dark color of his hair to a light tint.* For this purpose bleaching agents are used, such as chlorine and peroxide of hydrogen (H_2O_2). The peculiar "golden" tint which has been so much admired and has become so fashionable is produced by the last-named agent. A sample of the "Aurora Golden Fluid," sold by L. Shaw, 54 East 14th St., New York City, was submitted to Mr. N. Matsui, Ph.B., for examination. At my suggestion it was tested for this peroxide of hydrogen, which was found to be its chief component, a perfume being added to render it acceptable and valuable. In conclusion I would add the bit of wisdom from Ray, that "there is no better cosmetic than a severe temperance and purity."

The following are the results of an analysis of a considerable number of the cosmetics to be found in the market, and, with four exceptions, not included in the report made by Professor C. F. Chandler to the Metropolitan Board of Health in 1870. For convenience, they have been arranged in separate groups:

UNHARMFUL HAIR DYES.

The substances were first submitted to qualitative examination, and then the metal was quantitatively estimated. Bottle No. 1 was usually found to contain a tincture of pyrogalllic acid, or

* From Dr. Battershall's Legal Chemistry.

else pyrogallic acid only. The pyrogallic acid was determined by the blue color it gives with proto-salts of iron, also by the brown to violet precipitate it yields with lime water $\text{Ca}(\text{OH})_2$. The alcohol was obtained by distillation, a small glass condenser being used. The distillate was readily recognized by its aromatic odor, its burning properties, and its quick evaporation. Bottle No. 2 consisted in every case but one of argentic nitrate and ammonia, the exception being made by the addition of cupric sulphate. The determinations were readily made by well-known tests, the ammonia by Nessler's solution and potassic hydrate. The nitric acid seemed especially difficult to determine, as it failed to yield any reaction by the usual ferrous sulphate and sulphuric acid test. The alkaloids, such as brucia, refused to yield their brilliant reaction. It was only by boiling with concentrated sulphuric acid and copper filings that a small amount of the nitric dioxide (N_2O_2) was made perceptible. In estimating the amount of silver present, it was my custom to evaporate to dryness, and then take up with nitric acid (HNO_3), followed by the precipitation of the silver as argentic chloride—the usual amount of liquid taken being a drachm.

Bottle No. 3 contained an impure potassic sulphide, although I was assured by dealers that it was simply sulphur.

Hill's Instantaneous Hair and Whisker Dye. C. N. CRITTENDEN.

Bottle No. 1 contained a light-brown liquid, of acid reaction; no residue on evaporation of pyrogallic acid.

The contents of Bottle No. 2 consisted of an ammoniacal solution of argentic nitrate. One fluid ounce contained 17.5929 grains of silver.

Hambleton's Hair Stain. J. HAMBLETON.

Bottle No. 1 contained a yellowish-brown liquid, with acid reaction, yielding no residue on evaporation. Composed of pyrogallic acid, with excess of alcohol.

Bottle No. 2 contained an ammoniacal solution of argentic nitrate. One fluid ounce contained 39.246 grains of silver.

Richmond Hair Dye. J. BLAIR.

Bottle No. 1 contained a brownish liquid, with acid reaction, yielding no residue on evaporation, of pyrogallic acid.

Bottle No. 2 consisted of an ammoniacal solution of argentic nitrate, colored blue by a small quantity of cupric sulphate. One fluid ounce contained 51.5132 grains silver.

J. Cristadoro's Excelsior Liquid Hair Dye. J. CRISTADORO.

Bottle No. 1 contained a yellowish liquid, with acid reaction, of tincture of pyrogallic acid.

Bottle No. 2 consisted of an ammoniacal solution of argentic nitrate. One fluid ounce contained 72.549 grains silver.

Bottle No. 3 contained impure potassic bisulphide.

Bineaud's Celebrated Lightning Liquid Hair Dye. JOHN F. HENRY, CURRAN & CO.

Bottle No. 1 contained a light-brown liquid, acid reaction, leaving no residue on evaporation, of pyrogallic acid.

Bottle No. 2 consisted of an ammoniacal solution of argentic nitrate. One fluid ounce contained 81.2050 grains silver.

Bottle No. 3 composed of potassic bisulphide.

Batchelor's Premium Liquid Hair Dye. WM. A. BATCHELOR.

Bottle No. 1 contained a dark-brown liquid, acid reaction, yielding no residue on evaporation, of pyrogallic acid.

Bottle No. 2 consisted of an ammoniacal solution of argentic nitrate. One fluid ounce contained 81.9766 grains silver.

Bottle No. 3 composed of an impure potassic bisulphide.

POISONOUS HAIR RESTORERS.

These likewise were first submitted to qualitative examination ; on proving the presence of lead, a fluid ounce was carefully measured out and filtered. The method of determining the lead had then to be considered. At first an attempt was made to determine it as such, precipitating it by means of zinc. This proved unsatisfactory, and the lead was therefore estimated as sulphate, a few drops of concentrated sulphuric acid being added to the filtrate, which was then evaporated to small bulk and weighed. The residue on the filter, consisting chiefly of sulphur, was burned in a porcelain crucible. The incinerated residue was then dissolved in nitric acid, and the lead precipitated as sulphate. The presence of acetic acid was made known by the precipitate of basic acetate of iron, obtained by boiling with a neutral solution of ferric chloride.

POISONOUS HAIR RESTORERS.

American Hair Restorer. C. E. FISHER & Co.

A colorless solution, with no sediment ; neutral to test paper ; lead combined as acetate. One fluid ounce contained :

(1).....	0.12 grains of lead.
(2).....	0.17 " "
Average.....	0.145 " "

Jerome's Hair-Color Restorer and Invigorator. JOSEPH W. HAYES, M.D.

A colorless liquid, with whitish sediment containing sulphur ; the solution was slightly acid ; the lead was combined as acetate ; it contained oil. One fluid ounce contained :

(1).....	0.51 grains of lead.
(2).....	0.51 " "
Average.....	0.51 " "

London Hair-Color Restorer and Dressing. SWAYNE & SONS.

A colorless oily solution, with white to yellow sediment ; acid reaction ; contained sulphur ; most of the lead was in solution, and combined as acetate. One fluid ounce contained :

(1).....	0.85	grains of lead.
(2)....	1.16	" "
Average....	1.01	" "

Dr. S. A. Chevalier's Life for the Hair. SARAH A. CHEVALIER, M.D.

A colorless solution, with brown or black sediment ; neutral reaction ; almost all lead in sediment with S., the lead was combined as acetate. One fluid ounce contains :

(1).....	1.04	grains of lead.
(2).....	0.998	" "
Average.....	1.02	" "

Clock's Excelsior Hair Restorer. DR. FRANK B. CLOCK.

A colorless solution, with dark-brown sediment ; acid to test paper ; contained sulphur in suspension ; the lead about equally divided between residue and solution, and was combined as acetate. One fluid ounce contained :

(1).....	1.91	grains of lead.
(2).....	1.95	" "
Average....	1.93	" "

Egyptian Hair Coloring. GEO. WM. SOUTHWICK.

A colorless solution, with a slight deposit of separated sulphur. The lead salt held in suspension by a solution of sodic hyposulphite ; acid to test paper. One fluid ounce contained 2.37 grains of lead.

Pearson & Co.'s Circassian Hair Rejuvenator. J. S. PEARSON & CO.

A colorless solution, with yellowish sediment ; acid reaction ; contained S.; lead combined as acetate. The lead was about equally divided between solution and sediment. One fluid ounce contained :

(1).....	2.23	grains of lead.
(2).....	2.85	" "
Average.....	2.54	" "

Knowles' Vegetable Hair Restorer. WM. H. KNOWLES.

A brown solution with dark-brown sediment ; acid reaction ; most of lead was in sediment, containing sulphur. The salt used was lead acetate. One fluid ounce contained :

(1).....	2.48	grains of lead.
(2).....	2.77	" "
Average.....	2.63	" "

Montgomery's Hair Restorer. WM. C. MONTGOMERY.

A colorless solution, containing a pale-yellow sediment ; the sediment is chiefly sulphur. Most of the lead being in solution, the solution is acid ; the lead is combined as acetate. One fluid ounce contains :

(1).....	3.17	grains of lead.
(2).....	3.32	" "
Average.....	3.24	" "

Xanthine Hair Restorative. R. W. POWERS & Co.

A colorless solution, with yellowish sediment, flavored with bay rum. Acid reaction, contained sulphur ; lead combined as acetate ; most of lead was in the solution. One fluid ounce contained :

(1).....	4.02	grains of lead.
(2).....	4.21	" "
Average.....	4.11	" "

Louisiana Creole Hair Restorer. MANSFIELD & HIGBEE.

A colorless solution, with a very light yellow sediment. Solution slightly acid. Sediment essentially composed of S. Most of lead in solution, and combined as acetate. One fluid ounce contained :

(1).....	4.40	grains of lead.
(2).....	4.54	" "
Average.....	4.47	" "

Barratt's Vegetable Hair Restorative. J. R. BARRATT & Co.

A colorless solution, with yellow sediment ; acid to test paper. The lead was about equally divided between solution and sediment. Contained S. The lead salt was plumbic acetate. One fluid ounce contained :

(1).....	4.89	grains of lead.
(2).....	4.78	" "
Average.....	4.84	" "

Morse's Revivum, the Electric Hair Restorer. C. N. CRITTENDEN.

A colorless solution, with yellowish sediment, containing sulphur; acid reaction; lead combined as acetate. One fluid ounce contained :

(1).....	5.50 grains of lead.
(2).....	5.59 " "
Average.....	5.54 " "

Dr. Tebbetts' Physiological Hair Regenerator. TEBBETTS BROS.

A colorless solution, with yellow sediment ; acid to test paper ; contained much S. The lead was mostly in solution, and is combined as acetate. One fluid ounce contained :

(1).....	6.76 grains of lead.
(2).....	6.68 " "
Average ...	6.72 " "

Inimitable Hair Coloring. DEMAS BARNES & CO.

A yellow liquid, with grayish sediment ; neutral reaction ; most of the lead in combination with sulphur ; the lead was in the substance as plumbic acetate ; contained in four-ounce bottle. One fluid ounce contained :

(1).....	7.95 grains of lead.
(2).....	7.95 " "
Average.....	7.95 " "

NON-POISONOUS HAIR RESTORERS.

The following articles do not come within the previous classification :

Nature's Hair Restorer. PROCTOR BROS.

A colorless solution, with neutral reaction, containing sodic hyposulphite, $\text{Na}_2\text{S}_2\text{O}_3$.

It gave no precipitate with HCl , H_2S , or $(\text{NH}_4)_2\text{S}$, *vide* Patent Office Reports, March 23d, 1869, and Feb. 1st, 1870.

Dr. Kennedy's Hair Tea, or Oil of Tea.

A brownish liquid, with acid reaction, containing bay-rum.

Slight white residue on evaporation ; contained none of the heavier metals, *i. e.*, no metals of HCl, H₂S, or (NH₄)₂S groups.

Hiawatha Hair Restorer. JOSEPH HOYT.

This article consisted of an ammoniacal solution of argentic nitrate ; contained in a two-ounce bottle.

One fluid ounce contained 3.05 grains silver, or the whole bottle contains 6.10 grains of silver, equivalent to 9.60 grains of argentic nitrate.

Summary.

UNHARMFUL HAIR DYES.

Grains of silver in one fluid ounce :

Hill's Instantaneous Hair Dye.....	17.59
Hambleton's Hair Stain.....	39.25
Richmond Hair Dye.....	51.51
Cristadoro's Hair Dye.....	72.55
Bineaud's Celebrated Hair Dye.....	81.20
Batchelor's Premium Hair Dye.....	81.98

POISONOUS HAIR RESTORERS.

Grains of lead in one fluid ounce :

American Hair Restorer.....	.15
Jerome's Hair Color Restorer and Invigorator	.51
London Hair Color Restorer and Dressing.....	1.01
Dr. S. A. Chevalier's Life for the Hair.....	1.02
Clock's Excelsior Hair Restorer.....	1.93
Egyptian Hair Coloring.....	2.37
Pearson & Co.'s Circassian Hair Rejuvenator.....	2.54
Knowles' Vegetable Hair Restorer.....	2.63
Montgomery's Hair Restorer.....	3.24
Xanthine Hair Restorative.....	4.11
Louisiana Creole Hair Restorer.....	4.47
Barratt's Vegetable Hair Restorative....	4.84
Morse's Revivum, the Electric Hair Restorer.....	5.54
Dr. Tebbetts' Physiological Hair Regenerator.....	6.72
Inimitable Hair Coloring.....	7.95

10 BARCLAY STREET,
NEW YORK CITY, October, 1878.

